

**Work Order ID 134787**

Monday, July 20, 2015 2:43:48 PM

**\*134787\***

Page 1

Item ID: D4917-315 Accept **\*N900040100\*** Setup Start **\*NS1\***  
Revision ID: Stop **\*NS2\***  
Item Name: Placard, Max Load  
Start Date: 7/20/2015 Start Qty: 10.00 **\*10\*** Cust Item ID:  
Required Date: 7/20/2015 Req'd Qty: 10.00 **\*10\*** Customer:  
Reference:

Approvals: Process Plan: ML5 Date: JUL 20 2015 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_  
Run Start **\*NR1\***  
Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| Draw Nbr                       | Revision Nbr             |                      |         |        |              |               |               |                  |                |
| D4917                          | A                        |                      |         |        |              |               |               |                  |                |

100

0.00

**\*100\***

Purchasing

Memo

Issue P/O: 29240

E-mail or Ship electronic file and or dwg to vendor

Manufacture as per Dwg and supplied files

Possible supplier: Studio Letrage

Material release note is required.

0.00

110

Receive &amp; Inspect for Damage &amp; Mat'l Certs

0.00

**\*110\***

Packaging

Memo

0.00

Packaging

6 15-07-2212x 57 15-08-04

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                             |                                                                                                                                                                                    |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 |                                   |                                              |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |
|--------------------------------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------|-----------------------------------|----------------------------------------------|---------------------------------|----------------------------------------|---------------------------------------------|-----------------------------------|---------------------------------------|------------------------------------------------|------------------------------------|--------------------------------|-----------------------------------------------|----------------------------------------|-----------------------------------|---------------------------------|-----------------------------------------------|-------------------------------|-----------------------------------------|---------------------------------------|-----------------------------------|-------------------------------------------------|------------------------------------------------------------|---------------------------------------------|--------------------------------------------|-----------------------------------|------------------------------------------|--------------------------------|----------------------------------------|------------------------------------------|-------------------------------------|---------------------------------------------|-------------------------------------------|-----------------------------------|--------------------------------------|----------------------------------|----------------------------------|-------------------------------------------|----------------------------------|-------------------------------------|----------------------------------------|-------------------------------------|---------------------------------|------------------------------|----------------------------------------------|---------------------------------------------|----------------------------------------------------------|---------------------------------------|----------------------------------|-------------------------------------|----------------------------------------------|----------------------------------------|--------------------------------------|------------------------------------------------|-------------------------------------------|-------------------------------------------|------------------------------------------------|---------------|--|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |                                             | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |                                           | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                                           |                                 |                                   |                                              |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |
| Date :                                                       |                                             | Step #:                                                                                                                                                                            |                                           | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 | MRB (QS1042) Approval             |                                              |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |
| Description Work Order Deviation                             |                                             |                                                                                                                                                                                    |                                           | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                           |                                 |                                   | Completed By                                 |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |
|                                                              |                                             |                                                                                                                                                                                    |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 |                                   | Lead hand / Supervisor Approval Verification |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |
|                                                              |                                             |                                                                                                                                                                                    |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 |                                   | QC / QA Coordinator Approval                 |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |
|                                                              |                                             |                                                                                                                                                                                    |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 |                                   |                                              |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |
| Root Cause                                                   |                                             | FAULT CATEGORY                                                                                                                                                                     |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 |                                   |                                              |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |
| Environment <input type="checkbox"/>                         | No Re-verification <input type="checkbox"/> | Pressure/Forced <input type="checkbox"/>                                                                                                                                           | Temperature/Cure <input type="checkbox"/> | Power Loss/Surge <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Positioned Wrong <input type="checkbox"/> | Design <input type="checkbox"/> | Operator <input type="checkbox"/> | Bending <input type="checkbox"/>             | Set-up <input type="checkbox"/> | Folio/Program <input type="checkbox"/> | Outside Dimensions <input type="checkbox"/> | Doc/Data <input type="checkbox"/> | Offset/Setup <input type="checkbox"/> | Centre Not Concentric <input type="checkbox"/> | BOM/Route <input type="checkbox"/> | Grain <input type="checkbox"/> | Over/Under tolerance <input type="checkbox"/> | Equip/Tooling <input type="checkbox"/> | Supplier <input type="checkbox"/> | Cracks <input type="checkbox"/> | Broken/Damage/Defect <input type="checkbox"/> | Weld <input type="checkbox"/> | Part Incorrect <input type="checkbox"/> | Handling/Pre <input type="checkbox"/> | Training <input type="checkbox"/> | Crimp/Kink/Ripple/Wave <input type="checkbox"/> | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/> | Part Lost/Missing <input type="checkbox"/> | Material <input type="checkbox"/> | Use for Testing <input type="checkbox"/> | Cuffs <input type="checkbox"/> | Contamination <input type="checkbox"/> | Out of Sequence <input type="checkbox"/> | Part Moved <input type="checkbox"/> | Internal Transport <input type="checkbox"/> | Poor Information <input type="checkbox"/> | Crushing <input type="checkbox"/> | Countersink <input type="checkbox"/> | Off-set <input type="checkbox"/> | Drawing <input type="checkbox"/> | Tribal Knowledge <input type="checkbox"/> | Rushing <input type="checkbox"/> | Heat Treat <input type="checkbox"/> | Cut Too Short <input type="checkbox"/> | Mislabeled <input type="checkbox"/> | Finish <input type="checkbox"/> | LOA <input type="checkbox"/> | Product Improvement <input type="checkbox"/> | Wave/Twist in Tube <input type="checkbox"/> | Instructions Incomplete/Unclear <input type="checkbox"/> | Fit/Function <input type="checkbox"/> | Misread <input type="checkbox"/> | Substation <input type="checkbox"/> | Process Improvement <input type="checkbox"/> | Marks/Chatter <input type="checkbox"/> | Drill Holes <input type="checkbox"/> | Misaligned/off center <input type="checkbox"/> | Turning Sequence <input type="checkbox"/> | Past Expiry Date <input type="checkbox"/> | Manufacturing Process <input type="checkbox"/> | OTHER : _____ |  |  |  |
| Misidentified <input type="checkbox"/>                       | Past Due <input type="checkbox"/>           |                                                                                                                                                                                    |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 |                                   |                                              |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |               |  |  |  |

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Start Date: 7/20/2015 Start Qty: 10.00 **\*10\*** Cust Item ID:  
Required Date: 7/20/2015 Req'd Qty: 10.00 **\*10\*** Customer:  
Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description                           | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp           |
|--------------------------------|----------------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|--------------------------|
| 120                            | QC6- Inspect dimensions to drawing                 | 0.00                 |         |        |              |               |               |                  |                          |
| <b>*120*</b>                   |                                                    |                      |         |        |              |               |               |                  |                          |
| QC                             | Memo                                               | 0.00                 |         |        |              |               |               |                  | DAS<br>38<br>AUG 05 2015 |
| Quality Control                |                                                    |                      |         |        |              |               |               |                  |                          |
| 130                            | Identify as per dwg & Stock Location: <u>ST138</u> | 0.00                 |         |        |              |               |               |                  |                          |
| <b>*130*</b>                   |                                                    |                      |         |        |              |               |               |                  |                          |
| Packaging                      | Memo                                               | 0.00                 |         |        |              |               |               |                  | DAS<br>27<br>AUG 05 2015 |
| Packaging                      |                                                    |                      |         |        |              |               |               |                  |                          |
| 140                            | QC21- Final Inspection - Work Order Release        | 0.00                 |         |        |              |               |               |                  |                          |
| <b>*140*</b>                   |                                                    |                      |         |        |              |               |               |                  |                          |
| QC                             | Memo                                               | 0.00                 |         |        |              |               |               |                  |                          |
| Quality Control                |                                                    |                      |         |        |              |               |               |                  |                          |

15/8/6 4J  
Sh 20150806

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                             |                                                                                                                                                                                    |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 |                                   |                                                 |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |         |  |  |  |
|--------------------------------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------|-----------------------------------|-------------------------------------------------|---------------------------------|----------------------------------------|---------------------------------------------|-----------------------------------|---------------------------------------|------------------------------------------------|------------------------------------|--------------------------------|-----------------------------------------------|----------------------------------------|-----------------------------------|---------------------------------|-----------------------------------------------|-------------------------------|-----------------------------------------|---------------------------------------|-----------------------------------|-------------------------------------------------|------------------------------------------------------------|---------------------------------------------|--------------------------------------------|-----------------------------------|------------------------------------------|--------------------------------|----------------------------------------|------------------------------------------|-------------------------------------|---------------------------------------------|-------------------------------------------|-----------------------------------|--------------------------------------|----------------------------------|----------------------------------|-------------------------------------------|----------------------------------|-------------------------------------|----------------------------------------|-------------------------------------|---------------------------------|------------------------------|----------------------------------------------|---------------------------------------------|----------------------------------------------------------|---------------------------------------|----------------------------------|-------------------------------------|----------------------------------------------|----------------------------------------|--------------------------------------|------------------------------------------------|-------------------------------------------|-------------------------------------------|------------------------------------------------|---------|--|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |                                             | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |                                           | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                                           |                                 |                                   |                                                 |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |         |  |  |  |
| Date :                                                       |                                             | Step #:                                                                                                                                                                            |                                           | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 | MRB (QSI042) Approval             |                                                 |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |         |  |  |  |
| Description Work Order Deviation                             |                                             |                                                                                                                                                                                    |                                           | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                           |                                 |                                   | Completed By                                    |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |         |  |  |  |
|                                                              |                                             |                                                                                                                                                                                    |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 |                                   | Lead hand / Supervisor<br>Approval Verification |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |         |  |  |  |
|                                                              |                                             |                                                                                                                                                                                    |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 |                                   | QC / QA Coordinator<br>Approval                 |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |         |  |  |  |
|                                                              |                                             |                                                                                                                                                                                    |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 |                                   |                                                 |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |         |  |  |  |
| <b>Root Cause</b>                                            |                                             | <b>FAULT CATEGORY</b>                                                                                                                                                              |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 |                                   |                                                 |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |         |  |  |  |
| Environment <input type="checkbox"/>                         | No Re-verification <input type="checkbox"/> | Pressure/Forced <input type="checkbox"/>                                                                                                                                           | Temperature/Cure <input type="checkbox"/> | Power Loss/Surge <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Positioned Wrong <input type="checkbox"/> | Design <input type="checkbox"/> | Operator <input type="checkbox"/> | Bending <input type="checkbox"/>                | Set-up <input type="checkbox"/> | Folio/Program <input type="checkbox"/> | Outside Dimensions <input type="checkbox"/> | Doc/Data <input type="checkbox"/> | Offset/Setup <input type="checkbox"/> | Centre Not Concentric <input type="checkbox"/> | BOM/Route <input type="checkbox"/> | Grain <input type="checkbox"/> | Over/Under tolerance <input type="checkbox"/> | Equip/Tooling <input type="checkbox"/> | Supplier <input type="checkbox"/> | Cracks <input type="checkbox"/> | Broken/Damage/Defect <input type="checkbox"/> | Weld <input type="checkbox"/> | Part Incorrect <input type="checkbox"/> | Handling/Pre <input type="checkbox"/> | Training <input type="checkbox"/> | Crimp/Kink/Ripple/Wave <input type="checkbox"/> | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/> | Part Lost/Missing <input type="checkbox"/> | Material <input type="checkbox"/> | Use for Testing <input type="checkbox"/> | Cuffs <input type="checkbox"/> | Contamination <input type="checkbox"/> | Out of Sequence <input type="checkbox"/> | Part Moved <input type="checkbox"/> | Internal Transport <input type="checkbox"/> | Poor Information <input type="checkbox"/> | Crushing <input type="checkbox"/> | Countersink <input type="checkbox"/> | Off-set <input type="checkbox"/> | Drawing <input type="checkbox"/> | Tribal Knowledge <input type="checkbox"/> | Rushing <input type="checkbox"/> | Heat Treat <input type="checkbox"/> | Cut Too Short <input type="checkbox"/> | Mislabeled <input type="checkbox"/> | Finish <input type="checkbox"/> | LOA <input type="checkbox"/> | Product Improvement <input type="checkbox"/> | Wave/Twist in Tube <input type="checkbox"/> | Instructions Incomplete/Unclear <input type="checkbox"/> | Fit/Function <input type="checkbox"/> | Misread <input type="checkbox"/> | Substation <input type="checkbox"/> | Process Improvement <input type="checkbox"/> | Marks/Chatter <input type="checkbox"/> | Drill Holes <input type="checkbox"/> | Misaligned/off center <input type="checkbox"/> | Turning Sequence <input type="checkbox"/> | Past Expiry Date <input type="checkbox"/> | Manufacturing Process <input type="checkbox"/> | OTHER : |  |  |  |
| Misidentified <input type="checkbox"/>                       | Past Due <input type="checkbox"/>           |                                                                                                                                                                                    |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 |                                   |                                                 |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |         |  |  |  |

# Picklist Print

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Work Order ID: 134787

**\*134787\***

Parent Item: D4917-315

**\*D4917-315\***

Parent Item Name: Placard, Max Load

Start Date: 7/20/2015

Required Date: 7/20/2015

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP REV:A 13.12.31 NEW ISSUE DD VERF:RQ

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit | Total<br>Qty    | Qty<br>Issued | Date<br>Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|-----------------|---------------|----------------|--------|
| D4917-315P                      |                        | Purchased     | No          |                     |                  |                 | Each               | 0.0000         |             | 12              |               |                |        |
| <b>*D4917-315P*</b>             |                        |               |             |                     |                  |                 |                    |                | <b>**</b>   | 12 x 8015-08-00 |               |                |        |
| Placard, Max Load               |                        |               |             |                     |                  |                 |                    |                |             |                 |               |                |        |

VB

12x 8015-08-04.

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

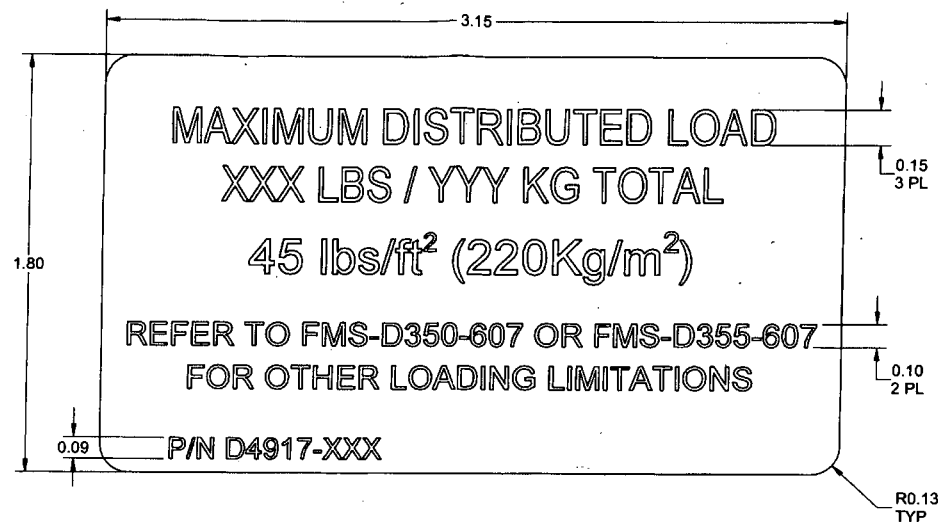


## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                       |                                              |  |
|--------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--|-----------------------|----------------------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |                                                | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |                                                            | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                                               |  |                       |                                              |  |
| Date :                                                       |                                                | Step #:                                                                                                                                                                            |                                                            | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  | MRB (QS1042) Approval |                                              |  |
| Description Work Order Deviation                             |                                                |                                                                                                                                                                                    |                                                            | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                               |  |                       | Completed By                                 |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                       | Lead hand / Supervisor Approval Verification |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                       | QC / QA Coordinator Approval                 |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                       |                                              |  |
| Root Cause                                                   |                                                | FAULT CATEGORY                                                                                                                                                                     |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                       |                                              |  |
| Environment <input type="checkbox"/>                         | No Re-verification <input type="checkbox"/>    | Pressure/Forced <input type="checkbox"/>                                                                                                                                           | Temperature/Cure <input type="checkbox"/>                  | Power Loss/Surge <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Positioned Wrong <input type="checkbox"/>     |  |                       |                                              |  |
| Design <input type="checkbox"/>                              | Operator <input type="checkbox"/>              | Bending <input type="checkbox"/>                                                                                                                                                   | Set-up <input type="checkbox"/>                            | Folio/Program <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Outside Dimensions <input type="checkbox"/>   |  |                       |                                              |  |
| Doc/Data <input type="checkbox"/>                            | Offset/Setup <input type="checkbox"/>          | Centre Not Concentric <input type="checkbox"/>                                                                                                                                     | BOM/Route <input type="checkbox"/>                         | Grain <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Over/Under tolerance <input type="checkbox"/> |  |                       |                                              |  |
| Equip/Tooling <input type="checkbox"/>                       | Supplier <input type="checkbox"/>              | Cracks <input type="checkbox"/>                                                                                                                                                    | Broken/Damage/Defect <input type="checkbox"/>              | Weld <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Part Incorrect <input type="checkbox"/>       |  |                       |                                              |  |
| Handling/Pre <input type="checkbox"/>                        | Training <input type="checkbox"/>              | Crimp/Kink/Ripple/Wave <input type="checkbox"/>                                                                                                                                    | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Part Lost/Missing <input type="checkbox"/>    |  |                       |                                              |  |
| Material <input type="checkbox"/>                            | Use for Testing <input type="checkbox"/>       | Cuffs <input type="checkbox"/>                                                                                                                                                     | Contamination <input type="checkbox"/>                     | Out of Sequence <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Part Moved <input type="checkbox"/>           |  |                       |                                              |  |
| Internal Transport <input type="checkbox"/>                  | Poor Information <input type="checkbox"/>      | Crushing <input type="checkbox"/>                                                                                                                                                  | Countersink <input type="checkbox"/>                       | Off-set <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Drawing <input type="checkbox"/>              |  |                       |                                              |  |
| Tribal Knowledge <input type="checkbox"/>                    | Rushing <input type="checkbox"/>               | Heat Treat <input type="checkbox"/>                                                                                                                                                | Cut Too Short <input type="checkbox"/>                     | Mislabeled <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Finish <input type="checkbox"/>               |  |                       |                                              |  |
| LOA <input type="checkbox"/>                                 | Product Improvement <input type="checkbox"/>   | Wave/Twist in Tube <input type="checkbox"/>                                                                                                                                        | Instructions Incomplete/Unclear <input type="checkbox"/>   | Fit/Function <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Misread <input type="checkbox"/>              |  |                       |                                              |  |
| Substation <input type="checkbox"/>                          | Process Improvement <input type="checkbox"/>   | Marks/Chatter <input type="checkbox"/>                                                                                                                                             | Drill Holes <input type="checkbox"/>                       | Misaligned/off center <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Turning Sequence <input type="checkbox"/>     |  |                       |                                              |  |
| Past Expiry Date <input type="checkbox"/>                    | Manufacturing Process <input type="checkbox"/> | OTHER : _____                                                                                                                                                                      |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                       |                                              |  |
| Misidentified <input type="checkbox"/>                       | Past Due <input type="checkbox"/>              |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                       |                                              |  |



**D4917-XXX PLACARD, MAX LOAD**

| PART NUMBER | LOAD                |
|-------------|---------------------|
| D4917-300   | 300 lbs / (136 kgs) |
| D4917-310   | 310 lbs / (141 kgs) |
| D4917-315   | 315 lbs / (143 kgs) |
| D4917-320   | 320 lbs / (145 kgs) |
| D4917-332   | 332 lbs / (151 kgs) |
| D4917-343   | 343 lbs / (156 kgs) |

**NOTES:**

- 1) MATERIAL: MAKE FROM 3M 7 MIL MASKING FILM #8522CP ON AVERY IPM #2031 ARIAL FONT, RED LETTERING (0.31 HIGH) ON WHITE ADHESIVE BACK.
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART "P/N D4917-XXX" USING ARIAL FONT, RED LETTERING (0.09" HIGH). WHERE XXX = MAX DISTRIBUTED WEIGHT IN LBS PER TABLE
- 7) WEIGHT: LESS THAN 0.01 lbs

UNCONTROLLED  
SUBJECT TO CHANGE  
WITHOUT NOTICE  
WORK IN PROGRESS  
NO 134787 MJS  
1507-20

2013-06-13  
A.P. ECN 13-672

|            |             |                             |                   |        |              |
|------------|-------------|-----------------------------|-------------------|--------|--------------|
| A          |             | NEW ISSUE                   |                   | AJS    | 13.06.06     |
| REV.       | DESCRIPTION |                             |                   | BY     | DATE         |
| DESIGN     | AJS         | DART AEROSPACE LTD          |                   |        |              |
| DRAWN      | AJS         | HAWKESBURY, ONTARIO, CANADA |                   |        |              |
| CHECKED    | ML          | DRAWING NO.                 | D4917             | REV. A |              |
| MFG. APPR. |             |                             |                   |        | SHEET 1 OF 1 |
| APPROVED   |             | TITLE                       | PLACARD, MAX LOAD |        | SCALE        |
| DE APPR.   |             |                             |                   |        | NTS          |
| DATE       | 13.06.06    |                             |                   |        |              |

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Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO29240**

Purchase Order Date 7/22/2015 11:45:55 AM  
PO Print Date 7/22/2015

Page Number 1 of 2

**Order From :**

VC-STU001

**Ship To :** DART AEROSPACE LTD

STUDIO DE LETTRAGE 2001  
210 MAIN WEST  
HAWKESBURY, ON K6A 2H6  
CA

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

**Contact Name**

**Vendor Phone** 613 632 5449

**Ship To Contact**

**Ship To Phone**

**Ship Via:** Yours ppd

**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #**

10127-2607

**Terms**

Net 30

**Currency**

CAD

**FOB**

Destination-Collect

| Line Nbr           | Reference Vendor Part Number | Description/ Mfg ID         | Req Date/ Taxable   | CD | Req Qty/ Unit of Measure | PO Unit Price | Extended Price |
|--------------------|------------------------------|-----------------------------|---------------------|----|--------------------------|---------------|----------------|
|                    | <b>Line Comments</b>         |                             | <b>Promise Date</b> |    |                          |               |                |
|                    | <b>Delivery Comments</b>     |                             |                     |    |                          |               |                |
| 7                  | D4917-315P                   | Placard, Max Load           | 7/28/2015           | FN | 12.00                    | \$6.67        | \$80.00        |
|                    |                              |                             | Yes                 |    | Each                     |               |                |
|                    |                              |                             | 7/28/2015           |    |                          |               |                |
|                    | AS PER DWG D4917 REV. A      |                             |                     |    |                          |               |                |
|                    | B127796                      |                             |                     |    |                          |               |                |
|                    | 134787                       |                             |                     |    |                          |               |                |
| <b>Line Total:</b> |                              |                             |                     |    |                          |               | <b>\$80.00</b> |
| 10                 | 71401-45                     | PROCUREMENT QUALITY CLAUSES | 7/28/2015           |    | 1.00                     | \$0.00        | \$0.00         |

**Procurement Quality Clauses**

A005 RIGHT OF ENTRY

A007 FIRST ARTICLE INSPECTION (FAI) BY SELLER,  
(DOCUMENTATION MAINTAINED BY SUPPLIER)

A013 SHELF LIFE CONTROLLED MATERIAL; 80% SHELF  
LIFE REQUIRED AT RECEIPT

A026 CERTIFICATION OF MATERIAL CONFORMANCE

A040 NOTIFICATION OF QUALITY ESCAPE

A042 DART NOTIFICATION BY SUPPLIER

A043 RETENTION OF QUALITY DOCUMENTS

No

7/28/2015

**Note:**

7/22/2015

2015-08-04



# STUDIO

210 Main Street West  
Hawkesbury, ON K6A 2H6  
Phone # 613-632-2001

## Invoice

| Date     | Invoice # |
|----------|-----------|
| 8/2/2015 | 40781     |

### Invoice To

Dart Aerospace Ltd  
1270 Aberdeen  
Hawkesbury  
Ontario  
K6A 1K7

### Ship To

| P.O. No. | Terms | Rep | Ship     | Via | F.O.B. | Project |
|----------|-------|-----|----------|-----|--------|---------|
| 29240    |       |     | 8/2/2015 |     |        | WO15675 |

| Quantity | Item | Description                                                                         | Price Each | Amount  |
|----------|------|-------------------------------------------------------------------------------------|------------|---------|
| ✓ 12     | 4005 | D4917-315P Maximum Distributed Load<br>Attn: Linda Lacelle<br><br><i>Sp15 of al</i> | 6.67       | ✓ 80.04 |

**Subtotal** \$80.04

Thank you for your business.

**Sales Tax** \$10.41

**Total** \$90.45

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                   |  |                                                                                                         |  |                        |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------|--|---------------------------------------------------------------------------------------------------------|--|------------------------|--|
| <b>Customer:</b><br>Studio de Le Hrage 2001                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  | <b>Purchase Order #:</b><br>29240 |  | <b>Part #:</b><br>15675                                                                                 |  | <b>Quantity:</b><br>12 |  |
| <b>Serial #:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | <b>Part #:</b>                    |  | <b>Quantity:</b>                                                                                        |  | <b>Quantity:</b>       |  |
| <b>Description:</b><br>D4917-315P                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                   |  |                                                                                                         |  |                        |  |
| <b>Certification:</b><br>We hereby certify that:<br>1. The above the listed items were manufactured, repaired and/or inspected in accordance with applicable drawings and/or specifications;<br>2. All work was accomplished in accordance with the Dart Aerospace Purchase Order;<br>3. Results of all inspections, chemical or physical tests, as well as other evidence, which shows the acceptability of raw materials, parts and/or assembly components are on file and available for inspection at any time. |  |                                   |  |                                                                                                         |  |                        |  |
| <b>Authority:</b><br>Avery                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                   |  |                                                                                                         |  |                        |  |
| <b>APPROVAL:</b><br>Valerie Young                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                   |  | <b>Signature:</b><br> |  |                        |  |
| <b>DATE:</b><br>Aug 04, 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                   |  | <b>Title:</b><br>Office Administrator                                                                   |  |                        |  |

## PRODUCT DATA SHEET



### Avery® IPM™ 2031

issued: 01/04/2005

#### Introduction

Avery® IPM™ 2031 is a high quality pressure-sensitive vinyl film, designed for use on wide format inkjet printers. Avery® IPM™ 2031 has excellent printing properties, allowing crisp print quality with bright and vibrant colours. Avery® IPM™ 2031 offers rapid ink drying and a water-resistant material. It combines good adhesion during its life and easy removal afterwards.

#### Description

Facefilm: 80-micron premium white calendered, topcoated vinyl.  
Adhesive: removable, acrylic based  
Backing paper: one side coated kraft paper, 140 g/m<sup>2</sup>

#### Features

- Excellent printability
- Vibrant and bright colours
- Crisp print quality
- Spray water resistant with specific pigmented inks
- Good adhesion, excellent removability
- Warranty on outdoor durability

#### Recommendations for use

A wide variety of full-colour graphics for indoor - and short/medium term outdoor applications such as posters, murals, displays, exhibition stands, vehicle graphics etc. Avery® IPM™ 2031 is suitable for application to a wide variety of substrates and will remove cleanly for up to 1 year after application.

IPM media should be handled with care as any surface contamination may affect the print quality. Media should be processed in an environment of 15-25°C and 30-70% relative humidity. After drying, the finished prints should be wrapped in polyethylene film and despatched flat or rolled with the printed side facing outwards. To protect prints against water, UV/light and abrasion, overlamination with a clear film is recommended. For specific details of Avery® DOL combinations, refer to "Technical Bulletin 5.3. Recommended combinations of Avery® Overlaminates and Avery® Digital Print Media"

**Always test your combination of Avery® IPM™ medium, inkjet printer and inks prior to commercial use.**

#### Compatibility

Avery® IPM™ 2031 is compatible with a broad selection of inkjet printers, when printing with pigmented, water based inks. For specific details refer to "Technical Bulletin 5.6 Avery Dennison Inkjet Print Media - Printer compatibility".

#### Durability:

Avery® IPM™ 2031 is warranted for outdoor use in conjunction with pigmented outdoor inks from HP, Encad and Colorspan. The warranted period varies from type of application and type of overlaminate from 18 months up to 5 years. For full details, see our Avery® IPM™ Outdoor warranty.



Graphics Division  
Rindijk 86, P.O. Box 118  
2394 ZG Hazerswoude - The Netherlands  
Tel +31 71 3421500 - Fax +31 71 3421538

## PRODUCT CHARACTERISTICS

Avery® IPM™ 2031

### Physical properties

#### Features

Caliper, facefilm  
Gloss

Dimensional stability

Adhesion, initial

Adhesion, ultimate

Flammability

Accelerating ageing

Shelf life

Removability

Not when applied to: Nitro-cellulose paints, ABS, Polystyrene, certain types of PVC

Durability<sup>2</sup>

#### Test method<sup>1</sup>

ISO 534

ISO 2813, 20°

DIN 30646

FINAT FTM-1, stainless steel

FINAT FTM-1, stainless steel

DIN 53587, 500h exposure

Stored at 22° C/50-55 % RH

#### Results

80 µm

1%

0.3 mm. max

180 N/m

260 N/m

Self extinguishing

No negative impact on film  
Performance

2 years

up to 1 year

Only when printed with ENCAD GO, HP and Colorsan pigmented inks and when properly applied in accordance with our application instructions. Only applicable for vertical exposure.

### Temperature range

#### Features

Application temperature

Service temperature

#### Results

Minimum: +10°C

-20°C to +80°C

#### Important

Information on physical and chemical characteristics is based upon tests we believe to be reliable. The values listed herein are typical values and are not for use in specifications. They are intended only as a source of information and are given without guarantee and do not constitute a warranty. Purchasers should independently determine, prior to use, the suitability of this material to their specific use. All technical data are subject to change. In case of any ambiguities or differences between the English and foreign versions of these Conditions, the English version shall be controlling.

#### Warranty

Avery® branded materials are manufactured under careful quality control and are warranted to be free from defect in material and workmanship. Any material shown to our satisfaction to be defective at the time of sale will be replaced without charge. Our aggregate liability to the purchaser shall in no circumstances exceed the cost of the defective materials supplied. No salesman, representative or agent is authorised to give any guarantee, warranty, or make any representation contrary to the foregoing.

All Avery® branded materials are sold subject to the above conditions, being part of our standard conditions of sale, a copy of which is available on request.

#### 1) Test methods

More information about our test methods can be found on our website.

#### 2) Durability

The durability is based on middle European exposure conditions. Actual performance life will depend on substrate preparation, exposure conditions and maintenance of the marking. For instance, in the case of signs facing south; in areas of long high temperature exposure such as southern European countries; in industrially polluted areas or high altitudes, exterior performance will be decreased.



www.averydennison.com

#### Graphics Division

Rindijk 86, P.O. Box 118  
2394 ZG Hazerswoude - The Netherlands  
Tel +31 71 3421500 - Fax +31 71 3421538



## **Procurement Quality Clauses**

### **A000 QUALITY CLAUSES NOT REQUIRED**

Non-shippable items, for Dart Aerospace internal use only.

### **A001 STATISTICAL PROCESS CONTROL**

The supplier must apply Statistical Process Control (SPC) to this purchase order. A (Cpk) of 1.33 or greater is required. Each shipment must be accompanied with a signed copy of the applicable SPC Control Plan(s). The Control Characteristic listed in SPC Control Plan shall be approved by DART AEROSPACE Quality Assurance prior to commencing with production / processing.

### **A002 FABRICATION INSPECTION SYSTEM (FIS) FAR21.303**

The supplier's shall maintain a FIS in compliance with the requirements of FAR 21.303 (h). The FIS shall be approved and subject to audit by FAA, or its representative at any time.

### **A003 QUALITY SYSTEM SURVEILLANCE**

As a DART AEROSPACE supplier manufacturing a product requiring DART AEROSPACE Customer and/or regulatory approval, the Seller's "Quality Control System" shall be subject to surveillance by DART AEROSPACE and the FAA.

### **A004 FAA-PMA /TSO**

As a DART AEROSPACE supplier manufacturing an article or component for which DART AEROSPACE holds Supplemental Type Certificates (STC), your inspection system shall be subject to inspection by DART AEROSPACE at a level commensurate with criticalness of the article or component.

### **A005 RIGHT OF ENTRY**

Allows DART AEROSPACE, its customers and regulatory agencies the right of access, through prior notification, to determine and verify the quality of work, applicable quality records and materials at all applicable area of all facilities, at any level of the supply chain, involved in the order.

### **A006 REQUIREMENTS FOR AIRWORTHINESS CERTIFICATION**

Conformity Certification is required for articles specified on this purchase document. Include with each shipment, a true copy of Form One, Authorized Release Certificate, for Airworthiness. Foreign government equivalent to FAA Form 8130-3 is acceptable for imported articles.

### **A007 FIRST ARTICLE INSPECTION (FAI) BY SELLER, (DOCUMENTATION MAINTAINED BY SUPPLIER)**

FAI shall be performed on all new or revised production manufactured items by seller at seller's facility. Results shall be documented on a report identified as "First Article Inspection Report" (FAIR). The report will be maintained at the seller's facility, and be available for review by Dart Aerospace when requested.

### **A008 FIRST ARTICLE INSPECTION (FAI) BY SELLER, (DOCUMENTATION SENT TO DART AEROSPACE)**

FAI's shall be performed on all new or revised production manufactured items by seller at seller's facility. Results will be documented on a report identified as a "First Article Inspection Report" (FAIR). The identified first article unit and the FAIR will be sent to Dart Aerospace.



## **Procurement Quality Clauses**

### **A009 FIRST ARTICLE INSPECTION (FAI) BY DART AEROSPACE AT SELLER'S FACILITY**

FAI and/or test shall be accomplished at the Seller's facility before the balance of order may be shipped. DART AEROSPACE will conduct or witness inspections and/or tests and the results will be on a report form identified as "First Article Inspection Report".

### **A010 DART AEROSPACE SOURCE INSPECTIONS**

Dart Aerospace inspection is required prior to shipment from your facility. Evidence of such inspection must be included in your packing documents accompanying each shipment. You must contact Dart Aerospace's buyer and establish verification arrangements and the method of product release. Drawings, inspection/test documents, and specifications, as applicable, covering material on this order shall be available for inspection at your facility.

### **A011 DELEGATIONS -SUPPLIER VERIFICATION OF DART AEROSPACE PRODUCT**

The supplier has met the requirements established by DART AEROSPACE quality organization for the verification of DART product.

### **A012 CHEMICAL AND PHYSICAL TEST REPORTS**

Each shipment must be accompanied by one (1) legible and reproducible copy of all chemical and physical test reports identifiable with materials ordered. The reports must contain the signature and title of the authorized representative of the agency performing the test and must assure conformance to specification requirements.

### **A013 SHELF LIFE CONTROLLED MATERIAL; 80% SHELF LIFE REQUIRED AT RECEIPT**

Time sensitive material shall be furnished with a minimum of 80% of its shelf life remaining at date of shipment. Shelf life duration, date of manufacture and date of expiration shall be listed on material certification.

### **A014 SHELF LIFE CONTROLLED MATERIAL; 70% SHELF LIFE REQUIRED AT RECEIPT**

Time sensitive material shall be furnished with a minimum of 70% of its shelf life remaining at date of shipment. Shelf life duration, date of manufacture and date of expiration shall be listed on material certification.

### **A015 SHELF LIFE CONTROLLED MATERIAL; 60% SHELF LIFE REQUIRED AT RECEIPT**

Time sensitive material shall be furnished with a minimum of 60% of its shelf life remaining at date of shipment. Shelf life duration, date of manufacture and date of expiration shall be listed on material certification.

### **A016 PERSONNEL QUALIFICATION**

Supplier shall ensure all employees performing quality sensitive tasks on Dart products are qualified to perform the task associated with the product and this information is available in their training records.



## **Procurement Quality Clauses**

### **A017 RAW MATERIAL IDENTIFICATION (AS APPLICABLE)**

#### **A. Sheet or Plate Stock -Metallic or Non-Metallic**

Each sheet or plate shipped shall be identified by continuous stenciling, of sufficient size to be readily legible, applied by permanent ink or dye of contrasting color, non-injurious to metal surfaces and not soluble.

#### **B. Rod, Bar or Tube -all shapes -1/2 inch cross section or larger**

Each length of Rod, Bar or Tube shipped shall be identified at one end or by continuous stenciling, of sufficient size to be readily legible, applied by permanent ink or dye of contrasting color, non-injurious to metal surfaces and not soluble in cutting and coolant oils. If continuous, spacing between groups of stencil letters shall not exceed twelve (12) inches. Information shall include material type or designation, material specification and temper.

#### **C. Rod, Bar or Tube -all shapes -Smaller than 1/2 inch cross section**

Rod, bar or tube shipped shall be bundled together; each bundle containing materials from the same (manufacturing/heat treatment) batch, and shall be identified as follows: An adhesive label or identification tag shall be securely attached to each bundle. This label or tag shall be permanently marked to indicate material type or designation, material specification and temper.

#### **D. Castings / Forging -Ferrous or Non-Ferrous**

Material shipped shall be identified with the part number, "melt" number, heat treat lot (if applicable) and serial number (if applicable). Identification of parts shall be in accordance with applicable drawings/specifications. Where drawings or specifications do not define method of identification, such identification shall be effected in accordance with MIL-STD-130.

#### **E. Extrusions**

Each length of extrusion shall be identified at one end or by continuous stenciling, of sufficient size to be readily legible, applied by permanent ink or dye of contrasting color, non-injurious to metal surfaces and not soluble in cutting and coolant oils. If continuous, spacing between groups of stencil letters shall not exceed twelve inches. Information shall include material type or designation, material specification, temper and heat lot number.

### **A018 ELECTRICAL EQUIPMENT**

Each shipment shall be accompanied by one (1) legible and reproducible copy of a certificate containing the signature and title of the person authorizing the release of product. The certificate shall contain the part number, specification to which they conform, and general characteristic. When the parts are serialized, serial numbers shall be included on the certification. Manufacturer will maintain test reports, specification conformation and general characteristics on-site and available upon request.

### **A019 ELECTRICAL CABLES (WIRES)**

Electrical cables shall be identified with the part number and manufacturing code. The spool, and Certificate of Conformance shall be identified per applicable standard/specification with the following information: standard / specification, size code, manufacturing year, country code (if applicable), and manufacturer.



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### **A020 NON-DESTRUCTIVE TEST/INSPECTION IDENTIFICATION**

All parts found to be acceptable by non-destructive testing methods are to be so identified by placing the proper acceptance test /inspection stamp on such acceptable parts. All parts found to be unacceptable are to be so identified by placing the proper withholding stamp on such defective parts. In those cases where NDT testing is being performed by a lower-tier supplier and his acceptance stamp is obliterated by further processing a copy of the lower-tier's certification must accompany shipment to DART AEROSPACE.

### **A021 DART AEROSPACE PROCESSING**

Seller shall assure that any process and or non-destructive test (NDT) requested on this purchase order shall be performed only by sources currently appearing on the DART AEROSPACE's "List of Approved Vendors" for the specific type of work to be conducted.

### **A022 APICAL PROCESSING**

Seller shall assure that any process work to be performed on Apical design and/or Part numbers by the Seller or its suppliers shall be performed only by sources noted in the latest published Apical Document Number MPP-120. MPP-120 Sources were used shall be submitted with AS9102 First Article Inspection Report and as requested by Dart Aerospace.

### **A023 IDENTIFICATION OF "DANGEROUS GOODS"**

A "Dangerous Goods" decal must be applied to the outer container of the item being shipped and to the associated shipping document (shipper). Also, one copy of the applicable MSDS sheet must be provided with each shipment.

This is in addition to federal & provincial requirements noted in IATA & DOT CFR. It does not relieve the supplier of their responsibility to comply with any marking & labeling requirements set forth in the IATA & DOT CFR or any other legal documentation that may apply to this shipment.

### **A024 PROCESS CERTIFICATIONS**

Each shipment shall be accompanied by one (1) legible and reproducible copy of a certificate that must include the signature and title of the person authorizing release of product certifying all processes used, such as heat treating, welding, NDT, surface preparation and treatment, etc. The certificate shall include the processing used, the specification to which they conform and the name of the agency that performed them if other than the seller (i.e. sub-vendor). When the parts are serialized, serial numbers shall be included on the certification.

### **A025 CERTIFICATE OF CONFORMANCE**

Each shipment shall be accompanied by one (1) legible and reproducible copy of a Certification Document (Certificate of Conformance, Shipper, Packing List, etc.) that includes the identification (signature, electronic signature, stamp, etc.) of the person authorizing release of product assuring the items ordered were produced in accordance with and conforming in all respects with all applicable requirements set forth in Buyer's Standard Purchase Order Terms and Conditions and/or its contract





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with Seller, including specifications, drawings, revision, marking requirements, physical item identification and electrical characteristics when applicable. When the parts are serialized, serial numbers shall be included on the certification.



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### **A026 CERTIFICATION OF MATERIAL CONFORMANCE**

Each shipment shall be accompanied by one (1) legible and reproducible copy of a Certification Document (Certificate of Conformance, Shipper, Packing List, etc.) that includes the identification (signature, electronic signature, stamp, etc. of the person authorizing release of product certifying each material used to fabricate the items ordered in this "Purchase Order".

### **A027 FLAMMABILITY TEST**

Test reports showing actual results of flammability test which meet the requirements of FAR 25.853(a) and signed by a responsible party shall accompany this shipment.

### **A028 FLAMMABILITY TEST**

Flammability Test reports showing actual results of flammability test(s). Reports must show Fire Worthiness resistance shall be such that the requirements of FAR 25.853 (a), Amendment 25-116 (60-Second Vertical Bunsen Burner Test). Appendix F, Part I will be met, or the latest revision of the Aircraft Materials Fire Test Handbook (DOT/FAA/AR-00/12).

### **A029 FLAMMABILITY TEST**

Flammability Test reports verifying Smoke emission shall be such that the requirements of FAR 25.853 (d) Amendment 25-116. Appendix F, Part V will be met, or the latest revision of the Aircraft Materials Fire Test Handbook (DOT/FAA/AR00/12). Reports must include a brief description of the sample and mounting.

### **A030 FLAMMABILITY TEST**

Flammability Test reports verifying Heat release capability shall be such that the requirements of FAR 25.853 (d), Amendment 25-116. Appendix F, Part IV will be met, or the latest revision of the Aircraft Materials Fire Test Handbook (DOT/FAA/AR-00/12). Reports must include a brief description of the sample and mounting.

### **A031 FLAMMABILITY TEST**

Flammability Test reports showing actual test results of flammability tests which meet the requirements of FAR 25.856 (a) and AC25.856-1 or the latest revision of the Aircraft Materials Fire Test Handbook (DOT/FAA/AR-00/12).

### **A032 PUBLIC LAW 101-592 FASTENER QUALITY ACT**

Supplier (Distributor) Certification: A Certification shall accompany each shipment of fasteners/washers, containing the following, as a minimum:

The manufacturer lot number(s) with associates part number(s); Manufacturers name; DART AEROSPACE P.O. number; and a statement to the effect that the manufactures certification (required by the Section 7 of the "Law") is on file with the distributor.

Supplier (Manufacturer) Certification: A Certification in accordance with Section 7 of the "Law" shall accompany each shipment.

Packaging: Each lot shall be packaged in a manner that ensures there will be no co-mingling of like fasteners from different lots in the same container.



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Identification: Each package shall be identified with the lot number, name of the parts, part identification number, P.O. number and name of fastener manufacturer.



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### **A033 STATEMENT OF CONFORMITY/TEST RECORDS FOR NAS, AN and MS FASTENERS**

1. When supplier is the fastener manufacturer -Each shipment shall be accompanied by one (1) legible and reproducible copy of a certificate of conformance containing the signature and title of an authorized representative which stated that the fastener have been manufactured in accordance with requirements of the applicable NAS, AN, MS government approved Parts Standard and Procurement Specification; and the chemical / physical test reports required by the government approved Procurement Specification are on file with the manufacturer, and available for review by customer and /or government quality assurance representative upon request.

2. When the supplier is a distributor -Each shipment shall be accompanied by one (1) legible and reproducible copy of conformity to purchase order requirements. The statement of conformity as a minimum shall contain DART AEROSPACE P.O. number, packing slip number; a copy of applicable test records (chemical, physical, processes and NDT) required by the government approved Parts Standard and Procurement Specification are available, or are obtainable upon customer request. The statement of conformity must contain the name of the fastener manufacturer, and shall be signed and dated by an authorized representative.

### **A034 INTER COMPANY SHIPPERS**

When products are shipped from one Dart Aerospace facility to another, the certification log number of the product being shipped must be recorded on the shipping document.

### **A035 OUT TIME REQUIREMENTS**

Supplier must record the "out-time" of exposure sensitive material (pre-preg) on packing list.

### **A036 PRIORITY DX-A1**

Priority DX-A1; This is a rated order certified for national defense use. You are required to follow all the provisions of Defense Priorities and Allocations System regulation (15 CFR 350).

### **A037 PRIORITY DO-A1**

Priority DO-A1; This is a rated order certified for national defense use. You are required to follow all the provisions of the Defense Priorities and Allocations system regulation (15 CFR 350).

### **A038 AS9102 FIRST ARTICLE INSPECTION (FAI) BY SELLER, (DOCUMENTATION MAINTAINED BY SUPPLIER)**

A FAI per AS9102 shall be performed on all new or revised manufactured items by the seller or at the seller's facility. Forms other than as identified in the Appendix of AS9102 must contain all required and conditionally required information and use same field reference numbers. Report is to be maintained at seller's facility and available for review at Dart Aerospace's request.

### **A039 AS9102 FIRST ARTICLE INSPECTION (FAI) BY SELLER, (DOCUMENTATION SENT TO DART AEROSPACE)**

A FAI per AS9102 shall be performed on all new or revised manufactured items by the seller or at the seller's facility. Forms used other than as identified in the Appendix of AS9102 must contain all required



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and conditionally required information and use same field reference numbers. The report will be sent to Dart Aerospace.



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### **A040 NOTIFICATION OF QUALITY ESCAPE**

Seller will report to Buyer if a product, article or part has been released from Seller or Seller's subcontractors or suppliers and subsequently found not to conform to the applicable design data.

### **A041 QUALITY MANAGEMENT SYSTEM**

Supplier shall implement, document and maintain a Quality Management System in accordance with applicable requirements of AS9100 series standards or ISO9001 standard and additional requirements specified on Buyers contract or purchase order.

The Quality Management system shall be appropriate to the products the Supplier designs, manufactures, repairs or sells and shall cover all activities concerned by Dart Aerospace contracts or purchase orders.

### **A042 DART NOTIFICATION BY SUPPLIER**

Supplier shall notify Dart of changes in product and / or process, change of supplier and changes of manufacturing facility locations.